

Multi-model assessment of the late-winter extra-tropical response to El Niño and La Niña

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<https://doi.org/10.1007/s00382-020-05415-y> (Climate Dynamics)

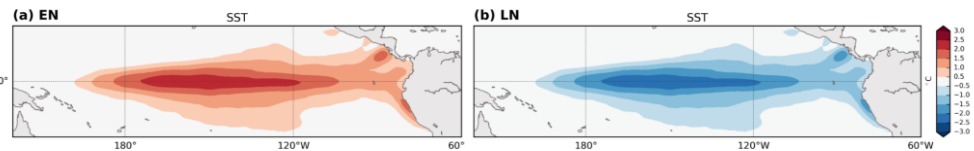


SCREEN CAPTURE
WELCOME



Experiments

Forcing:



Models:

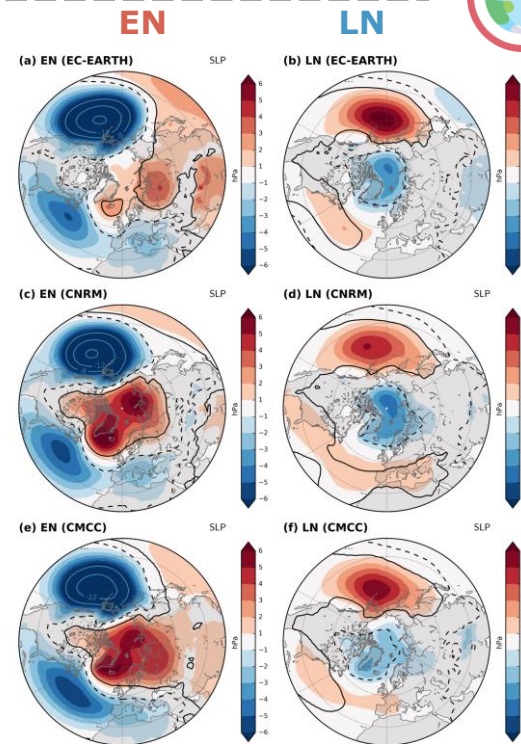
EC-EARTH
(EC-EARTH3.2)
512×256, L91, 0.01 hPa

CNRM
(ARPEGE6.3)
256×128, L91, 0.01 hPa

CMCC
(CAM5.2)
360×180, L46, 0.3 hPa

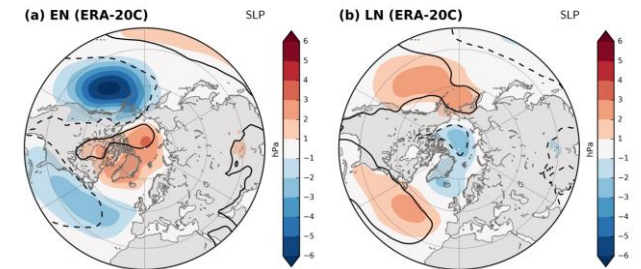


Forced response SLP



Anomalies wrt control experiment

cf. Obs

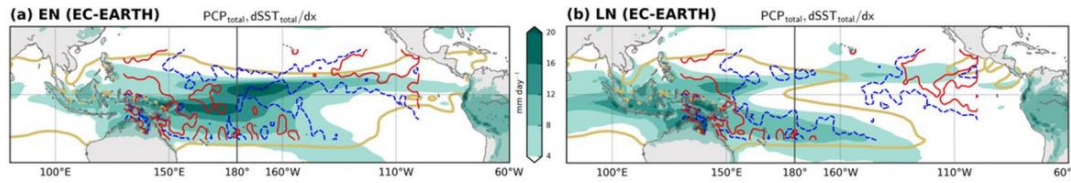


- ✓ Response over Aleutian Low
- ✓ Dipole in North Atlantic

1 2 3 4 Longitudinal shift $\sim 10^\circ$ - 20°

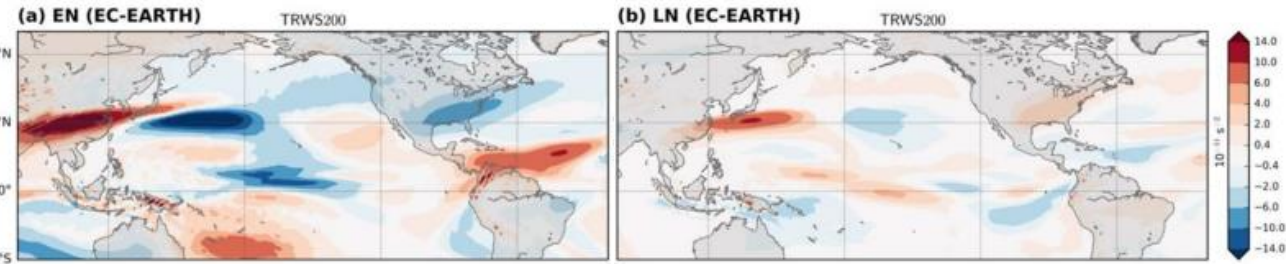
Amplitude EN $\sim 2 \times$ LN



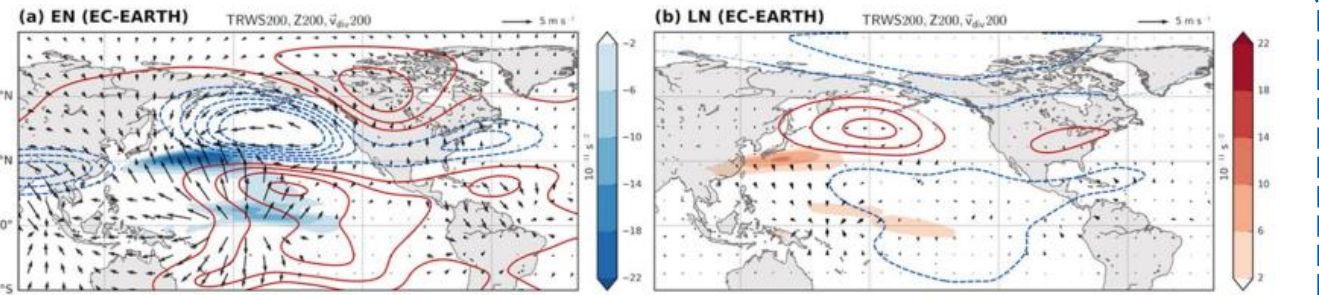
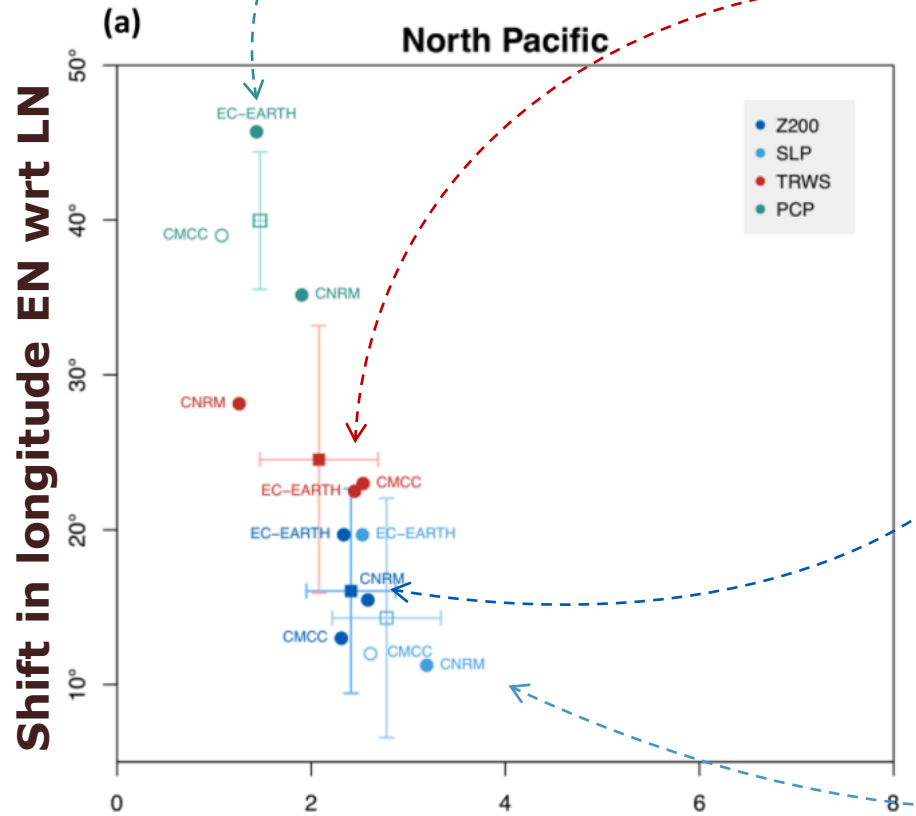


Precipitation \leftrightarrow convection \leftrightarrow upper-level divergence

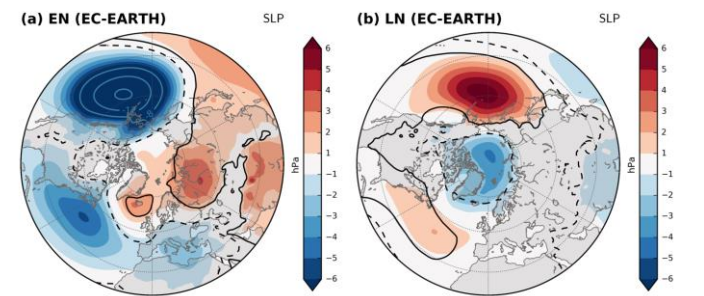
$$TRWS = -v'_{div} \cdot \nabla(\bar{\zeta} + f)$$



Rossby wave source : anomalous divergence AND mean flow



Rossby wave train at upper levels



Wave train projecting at surface

...& much more!

